

The documentation and process conversion measures necessary to comply with this revision shall be completed by 9 January 2007.

INCH-POUND

MIL-PRF-19500/577C
6 October 2006
SUPERSEDING
MIL-PRF-19500/577B
19 February 2003

* PERFORMANCE SPECIFICATION SHEET

SEMICONDUCTOR DEVICE, DIODE, SILICON, POWER RECTIFIER, FAST RECOVERY,
HIGH VOLTAGE, TYPES 1N6528 THROUGH 1N6535,
JAN, JANTX, JANTXV, AND JANS

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

* The requirements for acquiring the product described herein shall consist of
this specification sheet and MIL-PRF-19500.

1. SCOPE

1.1 Scope. This specification covers the performance requirements for silicon, high voltage, fast recovery power rectifier diodes. Four levels of product assurance are provided for each device as specified in MIL-PRF-19500.

1.2 Physical dimensions. See figure 1 (similar to DO-7).

* 1.3 Maximum ratings. Unless otherwise specified $T_A = +25^\circ\text{C}$.

Types	V_{RWM}	I_O $T_A = +55^\circ\text{C}$	I_O $T_A = +100^\circ\text{C}$	I_{FSM} $t_p = 8.3 \text{ ms}$	t_{rr}	T_{STG}	T_J	$R_{\theta JL}$ L = .25 (6.35 mm)
	<u>V dc</u>	<u>mA dc</u>	<u>mA dc</u>	<u>A (pk)</u>	<u>ns</u>	<u>°C</u>	<u>°C</u>	<u>°C/W</u>
1N6528	1,500	250 (1)	125 (1)	10	70	-65	-65	50
1N6529	2,000	250 (1)	125 (1)	10	70	to	to	50
1N6530	2,500	100 (2)	50 (2)	8	70	+200	+175	50
1N6531	3,000	100 (2)	50 (2)	8	70			50
1N6532	4,000	50 (3)	25 (3)	4	70			50
1N6533	5,000	50 (3)	25 (3)	4	70			50
1N6534	7,500	25 (4)	12.5 (4)	2	70			50
1N6535	10,000	25 (4)	12.5 (4)	2	70			50

- (1) Derate I_O linearly 2.78 mA/°C for $T_A = +55^\circ\text{C}$ to $+100^\circ\text{C}$, and 1.67 mA/°C for $T_A = +100^\circ\text{C}$ to 175°C .
- (2) Derate I_O linearly 1.11 mA/°C for $T_A = +55^\circ\text{C}$ to $+100^\circ\text{C}$, and 0.67 mA/°C for $T_A = +100^\circ\text{C}$ to 175°C .
- (3) Derate I_O linearly 0.55 mA/°C for $T_A = +55^\circ\text{C} = +100^\circ\text{C}$, and 0.33 mA/°C for $T_A = +100^\circ\text{C}$ to 175°C .
- (4) Derate I_O linearly 0.28 mA/°C for $T_A = +55^\circ\text{C} = +100^\circ\text{C}$, and 0.17 mA/°C for $T_A = +100^\circ\text{C}$ to 175°C .

Comments, suggestions, or questions on this document should be addressed to Defense Supply Center, Columbus, ATTN: DSCC-VAC, P.O. Box 3990, Columbus, OH 43218-3990, or emailed to semiconductor@dsc.dla.mil. Since contact information can change, you may want to verify the currency of this address information using the ASSIST Online database at <http://assist.daps.dla.mil>.

AMSC N/A

FSC 5961

* 1.4 Primary electrical characteristics.

Types	V _{RWM}	I _O T _A = +55°C	I _{R1} T _A = +25°C	V _{F1} at I _O	C at V _R = 50 V F _O = 1 kHz	Barometric pressure (reduced) t = 1 minute (minimum)
	<u>V dc</u>	<u>mA dc</u>	<u>μA dc</u>	<u>V (pk)</u>	<u>pF</u>	<u>mmHg</u>
1N6528	1,500	250	0.10	3.0	4.0	8
1N6529	2,000	250	0.10	3.0	4.0	8
1N6530	2,500	100	0.10	7.0	2.0	8
1N6531	3,000	100	0.10	7.0	2.0	8
1N6532	4,000	50	0.10	9.0	1.0	8
1N6533	5,000	50	0.10	9.0	1.0	8
1N6534	7,500	25	0.10	14.0	0.5	8
1N6535	10,000	25	0.10	14.0	0.5	8

2. APPLICABLE DOCUMENTS

2.1 General. The documents listed in this section are specified in sections 3, 4, or 5 of this specification. This section does not include documents cited in other sections of this specification or recommended for additional information or as examples. While every effort has been made to ensure the completeness of this list, document users are cautioned that they must meet all specified requirements of documents cited in sections 3, 4, or 5 of this specification, whether or not they are listed.

2.2 Government documents.

* 2.2.1 Specifications, standards, and handbooks. The following specifications, standards, and handbooks form a part of this document to the extent specified herein. Unless otherwise specified, the issues of these documents are those cited in the solicitation or contract.

* DEPARTMENT OF DEFENSE SPECIFICATIONS

MIL-PRF-19500 - Semiconductor Devices, General Specification for.

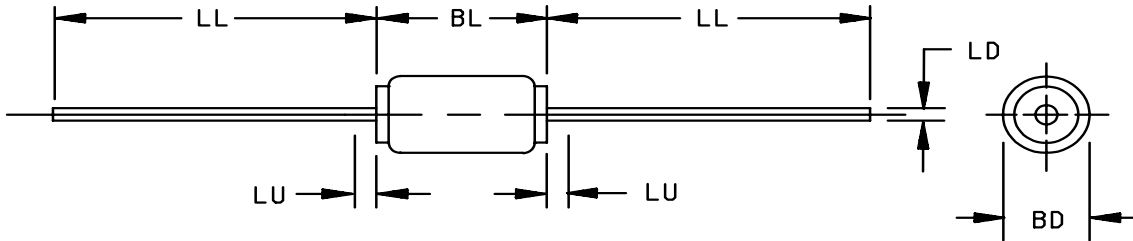
* DEPARTMENT OF DEFENSE STANDARDS

MIL-STD-750 - Test Methods for Semiconductor Devices.

MIL-STD-1276 - Leads For Electronic Component Parts.

* (Copies of these documents are available online at <http://assist.daps.dla.mil/quicksearch/> or <http://assist.daps.dla.mil> or from the Standardization Document Order Desk, 700 Robbins Avenue, Building 4D, Philadelphia, PA 19111-5094.)

2.3 Order of precedence. In the event of a conflict between the text of this document and the references cited herein, the text of this document takes precedence. Nothing in this document, however, supersedes applicable laws and regulations unless a specific exemption has been obtained.



PIN	Dimensions															
	BD				BL				LD				LL			
	Inches		Millimeters		Inches		Millimeters		Inches		Millimeters		Inches		Millimeters	
	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max	Min	Max
1N6528	.065	.125	1.65	3.18	.140	.200	3.56	5.08	.017	.023	0.43	0.58	1.0	1.3	25.4	33.0
1N6529	.065	.125	1.65	3.18	.140	.200	3.56	5.08	.017	.023	0.43	0.58	1.0	1.3	25.4	33.0
1N6530	.065	.125	1.65	3.18	.160	.220	4.06	5.59	.017	.023	0.43	0.58	1.0	1.3	25.4	33.0
1N6531	.065	.125	1.65	3.18	.160	.220	4.06	5.59	.017	.023	0.43	0.58	1.0	1.3	25.4	33.0
1N6532	.065	.125	1.65	3.18	.180	.240	4.57	6.10	.017	.023	0.43	0.58	1.0	1.3	25.4	33.0
1N6533	.065	.125	1.65	3.18	.180	.240	4.57	6.10	.017	.023	0.43	0.58	1.0	1.3	25.4	33.0
1N6534	.065	.125	1.65	3.18	.240	.300	6.10	7.62	.017	.023	0.43	0.58	1.0	1.3	25.4	33.0
1N6535	.065	.125	1.65	3.18	.240	.300	6.10	7.62	.017	.023	0.43	0.58	1.0	1.3	25.4	33.0

1. Dimensions are in inches.
2. Millimeters are given for general information only.
3. The specified lead diameter applies in the zone between .05 inch (1.27 mm) from the body to the end of the lead. Outside of this zone lead shall not exceed the body diameter.
4. Dimension LU defines region of uncontrolled diameter .050 inch max (1.27 mm).
5. In accordance with ASME Y14.5M, diameters are equivalent to Φ x symbology.

FIGURE 1. Physical dimensions (similar to DO-7).

3. REQUIREMENTS

* 3.1 General. The individual item requirements shall be as specified in MIL-PRF-19500 and as modified herein.

3.2 Qualification. Devices furnished under this specification shall be products that are manufactured by a manufacturer authorized by the qualifying activity for listing on the applicable qualified manufacturer's list (QML) before contract award (see 4.2 and 6.3).

3.3 Abbreviations, symbols, and definitions. Abbreviations, symbols, and definitions used herein shall be as specified in MIL-PRF-19500.

3.4 Interface and physical dimensions. The interface and physical dimensions shall be as specified in MIL-PRF-19500 and on figure 1 herein. Plastic packages are prohibited.

* 3.4.1 Lead material and finish. Lead material shall be type C, 99.9 percent silver or copper in accordance with MIL-STD-1276. Lead finish shall be in accordance with MIL-PRF-19500 and MIL-STD-750. Where a choice of lead finish is desired, it shall be specified in the acquisition document (see 6.2).

* 3.4.2 Diode construction. These devices shall be constructed utilizing non-cavity double plug construction with high temperature metallurgical bonding between both sides of the silicon die and terminal pins. Metallurgical bond shall be in accordance with the requirements of category I in MIL-PRF-19500.

* 3.5 Marking. Devices shall be marked as specified in MIL-PRF-19500. Manufacturer's identification and date code shall be marked on the devices. The polarity shall be indicated with a contrasting color band to denote the cathode end. The prefixes JAN, JANTX, and JANTXV may be abbreviated as J, JX, and JV, respectively. The part number may be reduced to J6528, JX6528, JV6528 or JS6528. No color coding will be permitted for part numbering.

3.6 Electrical performance characteristics. Unless otherwise specified herein, the electrical performance characteristics are as specified in 1.3, 1.4, and table I herein.

3.7 Electrical test requirements. The electrical test requirements shall be the subgroups specified in and table I herein.

3.8 Workmanship. Semiconductor devices shall be processed in such a manner as to be uniform in quality and shall be free from other defects that will affect life, serviceability, or appearance.

4. VERIFICATION

4.1 Classification of inspections. The inspection requirements specified herein are classified as follows:

- a. Qualification inspection (see 4.2).
- b. Screening (see 4.3).
- c. Conformance inspection (see 4.4).

4.2 Qualification inspection. Qualification inspection shall be in accordance with MIL-PRF-19500 and as specified herein.

* 4.2.1 Group E qualification. Group E inspection shall be performed for qualification or re-qualification only. In case qualification was awarded to a prior revision of the specification sheet that did not require the performance of table II tests, the tests specified in table II herein that were not performed in the prior revision shall be performed on the first inspection lot of this revision to maintain qualification.

4.3 Screening (JANS, JANTXV, and JANTX levels only). Screening shall be in accordance with table E-IV of MIL-PRF-19500 and as specified herein. Specified electrical measurements shall be made in accordance with table I herein. Devices that exceed the limits of table I herein shall not be acceptable.

Screen (see table E-IV of MIL-PRF-19500)	Measurement	
	JANS level	JANTX and JANTXV levels
(1)	Surge, see 4.3.2.	Surge, see 4.3.2.
9	I_{R1} and V_{F1}	Not applicable
11	I_{R1} and V_{F1} ; ΔI_{R1} and ΔV_{F1} , see table III herein.	I_{R1} and V_{F1}
12	See 4.3.1	See 4.3.1
13	Subgroups 2 and 3 of table I herein: ΔI_{R1} and ΔV_{F1} , see table III. I_{R1} and V_{F1} . Scope display evaluation (see 4.5.4)	Subgroup 2 of table I herein: ΔI_{R1} and ΔV_{F1} , see table III. I_{R1} and V_{F1} . Scope display evaluation (see 4.5.4)

(1) Surge screening shall be performed anytime after screen 3 and before screen 10.

4.3.1 Power burn-in conditions. Power burn-in conditions are as follows: Method 1038 of MIL-STD-750, condition B, T_A = room ambient as defined in the general requirements of 4 of MIL-STD-750; V_R = 1000 Vdc, f = 60Hz.

Types	I_O (mA dc)
1N6528, 1N6529	250
1N6530, 1N6531	100
1N6532, 1N6533	50
1N6534, 1N6535	25

4.3.2 Surge screening. Method 4066 of MIL-STD-750, T_A = +25°C, V_{RWM} = 0. Six surges. Apply 20 x I_O rated at T_A of 55°C, 8.3 ms.

4.4 Conformance inspection. Conformance inspection shall be in accordance with MIL-PRF-19500.

4.4.1 Group A inspection. Group A inspection shall be conducted in accordance with table E-V of MIL-PRF-19500, and table I herein

4.4.2 Group B inspection. Group B inspection shall be conducted in accordance with the conditions specified for subgroup testing in table E-VIa (JANS) and table E-VIb (JANTX and JANTXV) of MIL-PRF-19500. Electrical measurements (end-points) and delta requirements shall be in accordance with the applicable steps of table III herein.

4.4.2.1 Group B inspection, table E-VIa (JANS) of MIL-PRF-19500.

<u>Subgroup</u>	<u>Method</u>	<u>Conditions</u>
B3	4066	I_O at $T_A = 55^\circ\text{C}$, I_{FSM} = rated I_{FSM} , see 1.3, one surge, 8.3 ms, $V_{RWM} = 0$ V.
B4	1037	See 4.3.1, $t_{on} = t_{off} = 3$ minutes minimum, 2,000 cycles.
B5	1027	$T_A = +150^\circ\text{C}$ minimum, I_O = rated I_O (see 1.3) or adjust I_O and T_A as required to achieve $T_J = +275^\circ\text{C}$ for a minimum of 96 hours at $V_{RWM} = 1,000$ V.
B6	4081	$T_A = +25^\circ\text{C}$; $R_{\theta JL}$ = rated $R_{\theta JL}$ (see 1.3).

4.4.2.2 Group B inspection, table E-VIb (JANTX and JANTXV) of MIL-PRF-19500.

<u>Subgroup</u>	<u>Method</u>	<u>Conditions</u>
B2	4066	$I_O = I_O$ at $T_A = 55^\circ\text{C}$ one surge, 8.3 ms; I_{FSM} = rated I_{FSM} (see 1.3), $V_{RWM} = 0$
B3	1027	T_A = room ambient as defined in the general requirements in 4.5 of MIL-STD-750 minimum, I_O = rated I_O (see 4.3.1); adjust I_O or T_A as required to achieve $T_J \geq +125^\circ\text{C}$, $V_{RWM} = 1,000$ V.
B5	4081	$T_A = +25^\circ\text{C}$; $R_{\theta JL}$ = rated $R_{\theta JL}$ (see 1.3).

4.4.3 Group C inspection. Group C inspection shall be conducted in accordance with the conditions specified for subgroup testing in table E-VII of MIL-PRF-19500 and as follows. Electrical measurements (end-points) and delta requirements shall be in accordance with the applicable steps of table III herein.

4.4.3.1 Group C inspection, appendix E, table VII of MIL-PRF-19500.

<u>Subgroup</u>	<u>Method</u>	<u>Conditions</u>
C2	2036	Test condition A, weight = 5 lbs, $t = 30$ s.
C6	1027	$T_A = +25^\circ\text{C}$ minimum, I_O = rated I_O (see 4.3.1); adjust I_O or T_A as required to achieve $T_J \geq +125^\circ\text{C}$, $V_{RWM} = 1,000$ V.

4.4.4 Group E inspection. Group E inspection shall be conducted in accordance with the tests and conditions specified for subgroup testing in table E-IX of MIL-PRF-19500, and table II herein. Electrical measurements (end-points) shall be in accordance with table I, subgroup 2 herein.

4.5 Methods of inspection. Methods of inspection shall be specified in the appropriate tables and as follows.

4.5.1 Pulse measurements. Conditions for pulse measurement shall be as specified in section 4 of MIL-STD-750.

4.5.2 Inspection of conditions. Unless otherwise specified, all inspections shall be conducted at an ambient temperature, $T_A = +25^\circ\text{C} \pm 3^\circ\text{C}$.

4.5.3 Reverse-recovery time. The reverse recovery time shall be measured in the circuit of figure 2 or an equivalent circuit. The recovery conditions shall be 12.5 mA forward current to 25 mA reverse current. The reverse recovery time is defined as the time the rectifier begins to conduct in the reverse direction (crosses $I = 0$) until the reverse current decays to -6.3 mA. The point of contact on the leads shall be no less than .375 inch (9.52 mm) from the diode body.

* 4.5.4 Scope display test. Scope display test method 4023 of MIL-STD-750 shall be performed with the following conditions: Test condition B, $I_{BR} = 50 \mu A$ min.

TABLE I. Group A inspection.

Inspection <u>1</u> /	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 1</u>						
Visual and mechanical examination	2071					
<u>Subgroup 2</u>						
Forward voltage	4011	$I_F = 25 \text{ mA}$	V_{F1}			
1N6528, 1N6529					3.0	V dc
1N6530, 1N6531					7.0	
1N6532, 1N6533					9.0	
1N6534, 1N6535					14.0	
Reverse current leakage	4016	DC method; $V_R = \text{rated } V_{RWM}$ (see 1.3)	I_{R1}		0.1	$\mu\text{A dc}$
Breakdown voltage	4021	$I_R = 50 \mu\text{A dc}$	V_{BR}			V dc
1N6528				1,650		
1N6529				2,200		
1N6530				2,750		
1N6531				3,300		
1N6532				4,400		
1N6533				5,500		
1N6534				8,250		
1N6535				11,000		
<u>Subgroup 3</u>						
High temperature operation:		$T_A = 150^\circ\text{C}$				
Reverse current Leakage	4016	DC method; $V_R = \text{rated } V_{RWM}$ (see 1.3)	I_{R2}		50	$\mu\text{A dc}$
Low temperature operation:		$T_A = -55^\circ\text{C}$				
Forward voltage	4011	$I_F = 25 \text{ mA}$	V_{F2}			V dc
1N6528, 1N6529					4.8	
1N6530, 1N6531					11.2	
1N6532, 1N6533					14.4	
1N6534, 1N6535					22.4	

See footnote at end of table.

* TABLE I. Group A inspection - Continued.

Inspection <u>1/</u>	MIL-STD-750		Symbol	Limits		Unit
	Method	Conditions		Min	Max	
<u>Subgroup 3</u> - Continued						
Low temperature operation:		$T_A = -55^\circ\text{C}$				
Breakdown voltage	4021	$I_R = 50 \mu\text{A dc}$	V_{BR}			V dc
1N6528				1,650		
1N6529				2,200		
1N6530				2,750		
1N6531				3,300		
1N6532				4,400		
1N6533				5,500		
1N6534				8,250		
1N6535				11,000		
<u>Subgroup 4</u>						
Reverse recovery		See 4.5.3 and figure 2	t_{rr}		70	ns
Scope display evaluation	4023	Method 4203 of MIL-STD-750, figures 4023-3, -7, -9, -10 only. (see 4.5.4)				
Capacitance	4001	$V_R = 50 \text{ V dc}, 1 \text{ kHz} \leq f \leq 100 \text{ kHz}$	C			pF
1N6528, 1N6529					4.0	
1N6530, 1N6531					2.0	
1N6532, 1N6533					1.0	
1N6534, 1N6535					0.5	
<u>Subgroups 5, 6 and 7</u>						
Not applicable						

1/ For sampling plan, see MIL-PRF-19500.

* TABLE II. Group E inspection for (all quality levels) for qualification and requalification only.

Inspection	MIL-STD-750		Sampling plan
	Method	Conditions	
<u>Subgroup 1</u>			22 devices, c = 0
Temperature cycling	1051	500 cycles, condition C	
Hermetic seal Gross leak	1071		
Electrical measurements		See table III, steps 1 and 2	
<u>Subgroup 2</u>			22 devices, c = 0
Steady-state dc blocking life	1038	Condition A, t = 1,000 hours	
Electrical measurements		See table III, steps 1 and 2	
<u>Subgroup 3</u>			
Not applicable			
<u>Subgroup 4</u>			
Thermal resistance	4081	$T_A = +25^{\circ}\text{C}$; $R_{\theta JL} = \text{rated } R_{\theta JL}$ (see 1.3).	3 devices, c = 0
<u>Subgroup 5</u>			
Barometric pressure	1001	$V_R = \text{rated } V_{RWM}$ (see 1.3), pressure = 8mm Hg, t = 1 minute (minimum). Dielectric fluid may be used.	

* TABLE III. Screening, groups A, B, C, and E electrical and delta measurements. 1/ 2/ 3/

Step	Inspection	MIL-STD-750		Symbol	Limits		Unit
		Method	Conditions		Min	Max	
1.	Forward voltage 1N6528, 1N6529 1N6530, 1N6531 1N6532, 1N6533 1N6534, 1N6535	4011	Pulsed (see 4.5.1) $I_F = 25 \text{ mA}$, $t_p = 300 \mu\text{s}$; PPR = 60 Hz	V_{F1}		3.0 7.0 9.0 14.0	V (pk)
2.	Reverse current	4016	DC method $V_R = \text{rated } V_{RWM}$ (see 1.3)	I_{R1}		0.5	$\mu\text{A dc}$
3.	Reverse recovery time		See 4.5.3 and figure 2	t_{rr}		70	ns
4.	Capacitance 1N6528, 1N6529 1N6530, 1N6531 1N6532, 1N6533 1N6534, 1N6535	4001	$V_R = 50 \text{ V dc}$; $1 \text{ kHz} \leq f \leq 100 \text{ kHz}$	C		4.0 2.0 1.0 0.5	pF pF pF pF
5.	Forward voltage 1N6528, 1N6529 1N6530, 1N6531 1N6532, 1N6533 1N6534, 1N6535	4011	Pulsed (see 4.5.1) $I_F = 25 \text{ mA}$	ΔV_{F1}		± 0.2 ± 0.4 ± 0.8 ± 1.2	V (pk)
6.	Reverse current	4016	DC method	ΔI_{R1}	50 nA or ± 100 percent of initial value, whichever is greater.		

1/ The electrical measurements for table E-VIa (JANS) of MIL-PRF-19500 are as follows:

- Subgroup 3, see table III herein, steps 1, 2, 3, 4, 5, and 6.
- Subgroup 4, see table III herein, steps 1, 2, 3, 4, 5, and 6.
- Subgroup 5, see table III herein, steps 1, 2, 3, 4, 5, and 6.

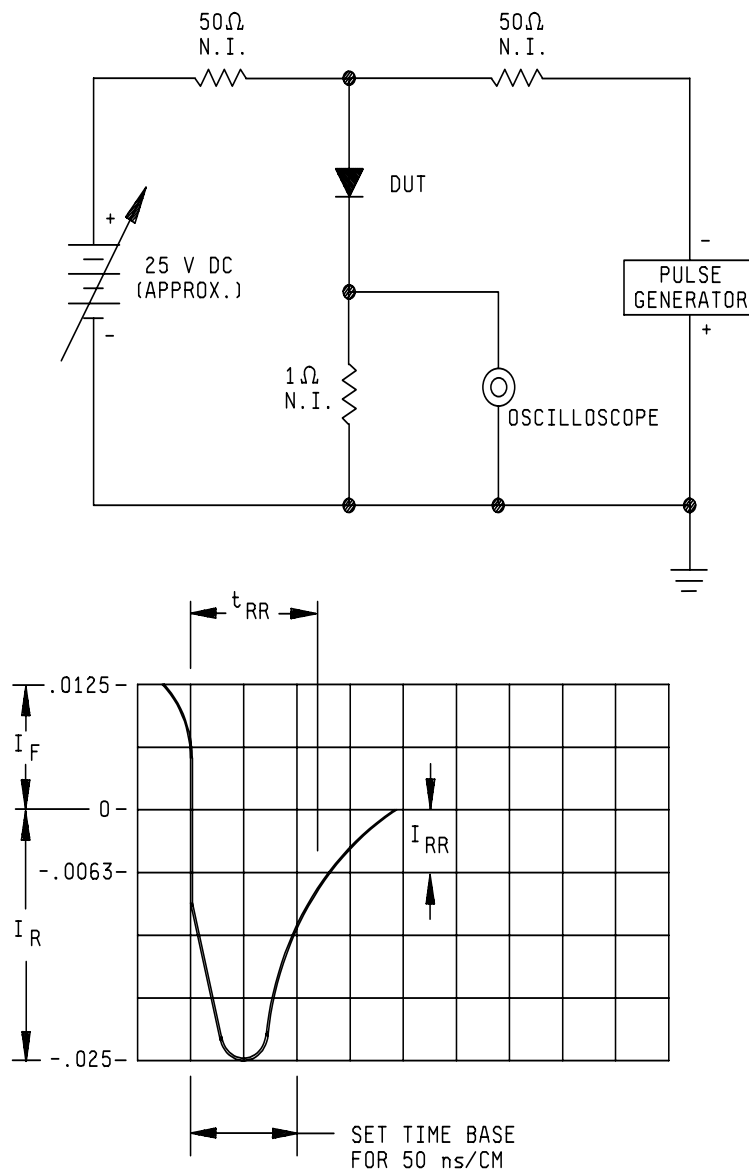
2/ The electrical measurements for table E-VIb (JANTX and JANTXV) of MIL-PRF-19500 are as follows:

- Subgroup 2, see table III herein, steps 1, 2, and 3.
- Subgroup 3, see table III herein, steps 1, 2, 3, and 4.
- Subgroup 6, see table III herein, steps 1, 2, 3, and 4.

3/ The electrical measurements for table E-VII of MIL-PRF-19500 are as follows:

- Subgroup 2, see table III herein, steps 1, 2, 3, 4, 5, and 6 (JANS);
and steps 1, 2, and 3 (JANTX and JANTXV).
- Subgroup 3, see table III herein, steps 1, 2 and 3.
- Subgroup 6, see table III herein, steps 1, 2, 3, 4, 5, and 6 (JANS);
and steps 1, 2, 3, 4, and 5 (JANTX and JANTXV).

4/ The delta measurements for table E-IX of MIL-PRF-19500 are subgroups 1 and 2, see table III herein, steps 1, 2, 3, 4, and 5.



NOTES:

1. Oscilloscope-rise time ≤ 7 ns; input impedance = 1 megohm; 22 pF.
2. Pulse generator - rise time ≤ 10 ns; source impedance 50 ohms.
3. Recovery time shall be measured on the above circuit and with equipment as shown. The pulse generator shall have a pulse repetition frequency of 1 kHz and a pulse width of 200 ns. Recovery conditions: 12.5 A forward current to .25 mA reverse current. Recovery time measured when rectifier recovers to -6.3 mA.

FIGURE 2. Reverse recovery time test circuit and characteristic nomograph.

5. PACKAGING

* 5.1 Packaging. For acquisition purposes, the packaging requirements shall be as specified in the contract or order (see 6.2). When packaging of materiel is to be performed by DoD or in-house contractor personnel, these personnel need to contact the responsible packaging activity to ascertain packaging requirements. Packaging requirements are maintained by the Inventory Control Point's packaging activities within the Military Service or Defense Agency, or within the Military Service's system commands. Packaging data retrieval is available from the managing Military Department's or Defense Agency's automated packaging files, CD-ROM products, or by contacting the responsible packaging activity.

6. NOTES

(This section contains information of a general or explanatory nature that may be helpful, but is not mandatory.)

6.1 Intended use. The notes specified in MIL-PRF-19500 are applicable to this specification.

* 6.2 Acquisition requirements. Acquisition documents should specify the following:

- a. Title, number, and date of this specification.
- b. Packaging requirements (see 5.1).
- c. Lead material and finish (see 3.4.1).
- d. Product assurance level and type designator.
- e. Destructive physical analysis when requested.

6.3 Qualification. With respect to products requiring qualification, awards will be made only for products which are, at the time of award of contract, qualified for inclusion in Qualified Manufacturers List (QML-19500) whether or not such products have actually been so listed by that date. The attention of the contractors is called to these requirements, and manufacturers are urged to arrange to have the products that they propose to offer to the Federal Government tested for qualification in order that they may be eligible to be awarded contracts or orders for the products covered by this specification. Information pertaining to qualification of products may be obtained from Defense Supply Center, Columbus, ATTN: DSCC/VQE, P.O. Box 3990, Columbus, OH 43218-3990 or e-mail vqe.chief@dla.mil.

6.4 Substitution information. Devices covered by this specification are substitutable for the manufacturers' and users' Part or Identifying Number (PIN). This information in no way implies that manufacturers' PIN's are suitable as a substitute for the military PIN.

PIN	Manufacturer's CAGE code	Manufacturer's and user's PIN
1N6528	53711 60211	8502234-215 RM115 M15FG M15UFG
1N6529	53711 49956 94117 60211	8502234-220 G339806 194087 RM116 RM135 RM140 M20FG M20UFG
1N6530	53711 60211	8502234-225 RM117 M25FG M25UFG
1N6531	53711 60211	4027428-103 4027428-113 8502234-230 4056502 RA352 RA643 RM118 RM123 M30FG M30UFG
1N6532	53711 23426 60211	8502234-240 28005-12 RM119 RM130 M40FG M40UFG

PIN	Manufacturer's CAGE code	Manufacturer's and user's PIN
1N6533	53711 60211	4027428-105 4027428-115 8502234-250 304-1-58A2 RA641 RA644 RM120 RM137 M50FG M50UFG
1N6534	53711 23426 60211	4027428-106 4027428-116 8502234-260 28005-7 RA642 RA645 RM121 RM131 M60FG M60FUFG
1N6535	58260 53711 23426 60211 23426 60211	13084424 8502234-280 8502234-300 28005-8 M100FG RM122 RM109 RM132 M100UFG M80FG M80UFG

6.5 Changes from previous issue. The margins of this specification are marked with asterisks to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

Custodians:

Army - CR
Navy - EC
Air Force - 11
NASA - NA
DLA - CC

Preparing activity:

DLA - CC

(Project 5961-2006-061)

Review activities:

Army - AR, AV, MI, SM
Air Force - 19, 99
Navy - AS, MC, OS

* NOTE: The activities listed above were interested in this document as of the date of this document. Since organizations and responsibilities can change, you should verify the currency of the information above using the ASSIST Online database at <http://assist.daps.dla.mil>.